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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/879,870	06/13/2001	William M. Appleman	82,282	4961

7590 08/01/2002

Office of Counsel Code 004
Naval Surface Warfare Center
Carderock Division Headquarters
9500 MacArthur Boulevard
West Bethesda, MD 20817-5700

EXAMINER

MENON, KRISHNAN S

ART UNIT	PAPER NUMBER
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1723

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DATE MAILED: 08/01/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/879,870	Applicant(s) APPLEMAN ET AL.	
	Examiner Krishnan S Menon	Art Unit 1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 6/13/01 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because it does not state the invention clearly and concisely to render it searchable. Correction is required. See MPEP § 608.01(b).

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2. The disclosure is objected to because of the following informalities: same part number 24 used for seal ring 24 and holding disc 24, para 0015, pages 5 and 6.

Appropriate correction is required.

Drawings

This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

The drawings are objected to under 37 CFR 1.83(a) because they fail to show 22 and 36 as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Applicant is required to submit a proposed drawing correction in reply to this Office action. However, formal correction of the noted defect may be deferred until after the examiner has considered the proposed drawing correction. Failure to timely submit the proposed drawing correction will result in the abandonment of the application.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

- (e) the invention was described in-
 - (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
 - (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

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Claims 1-4 and 6 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Funatsu (US 6,284,451).

Funatsu (451) discloses elongated filter membrane elements (hollow-fibers) with a spacer (3, Fig 1) for adjustably spacing the elements, holding elements in a bundled condition (2, Fig 1), pre-assembled means for establishing a sealed chamber within the module housing (1, Fig 1), means for taking a contaminated fluid through housing (7, Fig 1), drain for discharge of clean fluid (6, fig 1), pair of axially spaced rings (4, fig 1) in radial sealing contact with housing, epoxy resin cured seal member (col 7: 23-31), and the holding means retained within the seal ring before assembly to housing (3,4, fig 1). The pre-assembled means is adjustable before bundling in epoxy, then curing the epoxy, and then assembling in the housing (all fig 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Funatsu (451) in view of Okumura (US 4,668,401).

Funatsu (451), while disclosing a hollow fiber bundle in a housing with a fiber spacer, tube sheets made by curing an epoxy formulation after assembly, attached to the ends of the fiber sealingly attached to the housing, with capability for cleansing contaminated water, does not disclose the hollow fiber membrane module as being useful for oily binge water. Okumura (US 4,668,401) teaches a similar hollow fiber membrane module for use in cleaning oil contaminated water (col 8: 59-68). It would be obvious to one of ordinary skill in the art at the time of invention to chose a hollow-fiber module as taught by Funatsu (451) for cleaning oily water as taught by Okumura (401) as equivalent product for equivalent application.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1. Yamamoto (US 2001/0035374 A1). Fiber bundles separated by thread winding, with epoxy tube sheet, in a housing.
2. Sekino (US 4,451,369): Fiber bundles with epoxy tube sheets, multiple elements in a housing, separated by O-ring seals on tube sheets under radial compression
3. Kano (US 4,657,743): Stainless steel tube heat exchanger with tube separator and epoxy tube-sheet in a housing for blood.
4. Pasquali (US 5,725,949): tube bundles separated with thread winding, epoxy tube-sheet.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S Menon whose telephone number is 703-305-5999. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L Walker can be reached on 703-308-0457. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Krishnan S. Menon
Patent Examiner
July 29, 2002


W. L. WALKER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

Inventor: **Appleman** Application Number: 09/879870 Date: 6/13/01

Cl. #	Dep. on	Limitation	Funatsu 9/4/01 US 6,284,451	Okumura 5/87 US 4,668,401
1	--	Module housing with elongated elements in combination -- improvement residing in:	Fig 1	
		Preassembled means for establishing a sealed chamber within module	Fig 1	
		Holding elements in a bundles condition	2, fig 1	
		Spacer means for adjustably spacing elements	3, fig 1	
2	1	Contaminated fluid thru housing	Passage 7, fig 1	
		Drain for discharging clean fluid ...	6, fig 1	
		... in response to processing by element.	2 fig 1	
3	2	Preassembled means include: pair of axially spaced seal rings in radially outer sealing contact with housing	4, 3, fig 1	
		Holding means retained within seal ring for anchoring opposite end portions of processing elements in bundled condition	3, fig 1	
4	3	Preassembled means is assembled with elements adjustably positioned in epoxy resin ...	4, fig 1	
		Resin subsequently cured under clamping pressure to form holding means...	7(23-31)	
		...holding means retained within seal rings before assembly within housing	Fig 1	
5	4	Oily bilge water,	--	8(59-68)
		Element is filter membrane	--	Do
6	1	Preassembled means assembled with elements adjustable .: before	Fig 1, 7(23-31)	
		... bundling in epoxy..	Do	
		.. curing epoxy..	Do	
		Assembly in module	Do	
7	2	Oily bilge water ; filter elements	--	Do